



Spring 2018 edition designed by Paul Fonstad, Franklin College

# ROUNDS FOR TODAY'S COMPETITION

- Rebus Math
- Name the Game
- Punny Math
- Bad Definitions



# ROUND 1:

## Rebus Math

Each Rebus (pictogram) puzzle will be a picture representation of a mathematical term or phrase. Your task is to determine that mathematical term or phrase.

SAMPLE QUESTION:

Theorem

Four Color  
Theorem



# ROUND 1, QUESTION 1:





ROUND 1, QUESTION 2:

1 2 1

AND

2



# ROUND 1, QUESTION 3:



+



# ROUND 1, QUESTION 4:

Fi+



G





# ROUND 1, QUESTION 5:

$$\sum_{i=1}^{\infty} a_i$$





# ROUND 2: NAME THE GAME

Each statement will be a mathematical discovery related to a board game or card game. Your task is to determine the name of the board or card game.

# SAMPLE QUESTION

- Previously thought to be too complex for computers to master for at least another decade, advances in artificial intelligence allowed AlphaGo to defeat Lee Sedol, the human champion of this game, by 4 games to 1 in 2016.

• ANSWER: Go



# ROUND 2, QUESTION 1

- Using Markov chains, it can be shown that the square most likely to be visited in this game is Illinois Ave.



## ROUND 2, QUESTION 2

- Though most people think of this card game as one in which you try to find a collection of three cards that satisfy color, number, shape, and shading rules, you could also visualize it as looking for special sets of vectors in affine four space of order 3.





## ROUND 2, QUESTION 3

- This vertical two-player game, inspired by tic-tac-toe, was solved in October of 1988 when two different researchers independently proved that, if played perfectly, the first player would always be able to win.



## ROUND 2, QUESTION 4

- For this game where each of the four players has their own collection of 1, 2, 3, 4, and 5 square free polyominoes, Toby Gottfried has created a program that has helped discover the minimal board size on which all pieces could fit, the most lopsided score possible on the traditional board, and the answers to many other related questions.



## ROUND 2, QUESTION 5

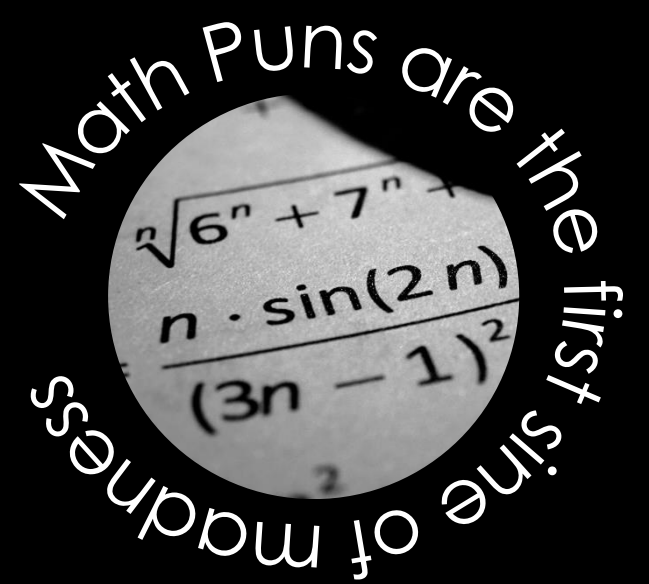
- Inspired by projective geometry, this game where any two cards have exactly one symbol in common could be played with a deck as large as 57 cards, but only is sold in decks of 55.



# ROUND 3:

# PUNNY MATH

The answer to each question is a math pun!

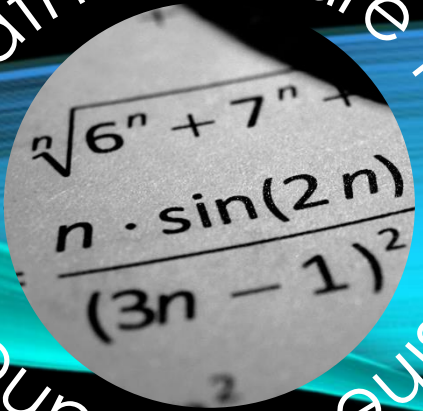


SAMPLE QUESTION:

What did the mathematician say when his parrot flew the coop?

ANSWER: Polygon

Math Puns are the first sine of madness

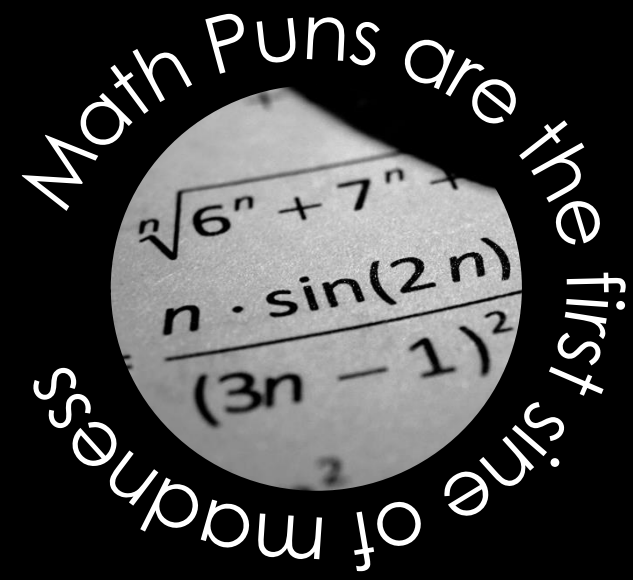


$\sqrt{6^n + 7^n}$   
 $n \cdot \sin(2n)$   
 $(3n - 1)^2$



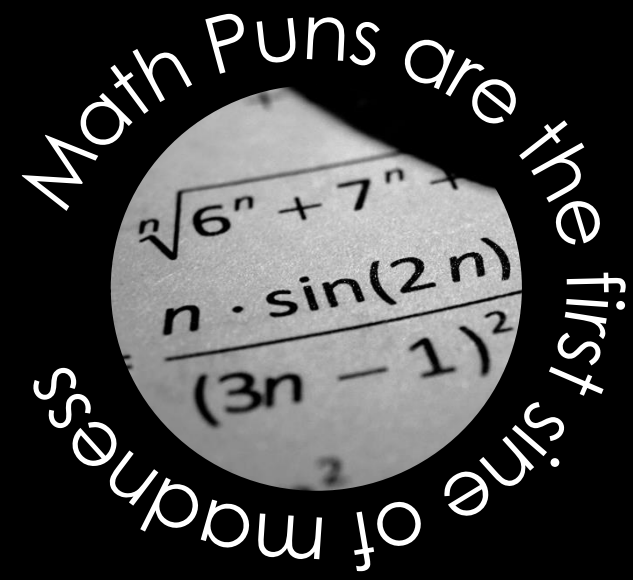
# ROUND 3, QUESTION 1

When the student added 3 filet mignons to 4 filet mignons and only got 6 filet mignons, their work had this.



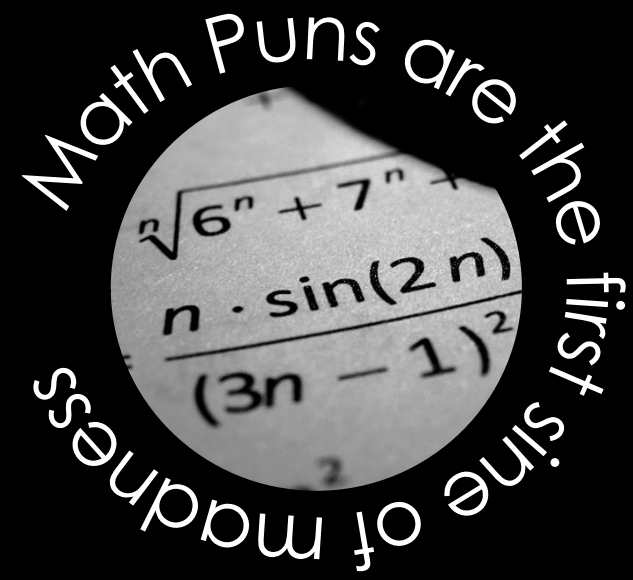
## ROUND 3, QUESTION 2

Why did the identity  $\sin(2r) = 2\sin(r)$  get turned down when it applied for a loan?



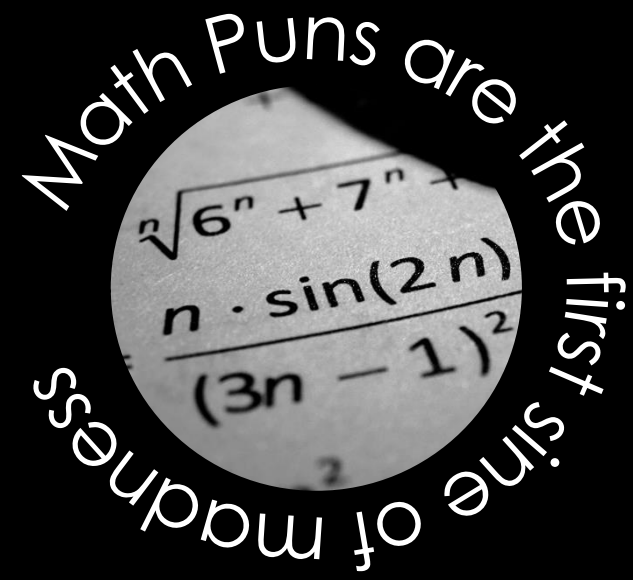
## ROUND 3, QUESTION 3

According to the Unsimplifying Fractions for Relaxation Society, one-fifth of all Americans are this.



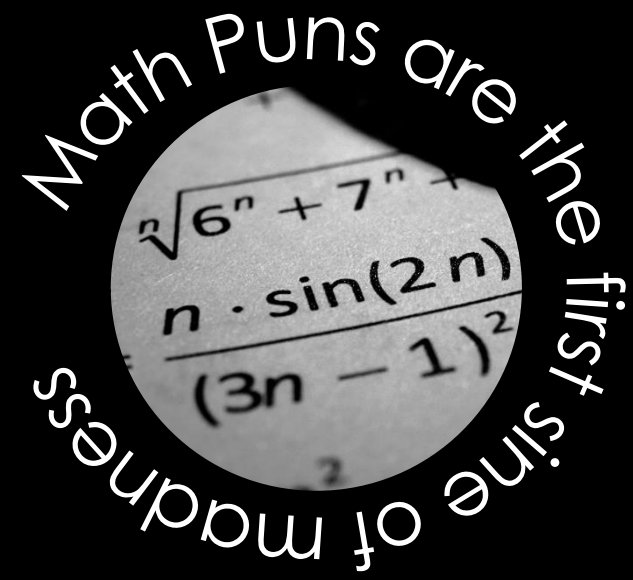
## ROUND 3, QUESTION 4

What is Kylo Ren's favorite part of differential equations?



# ROUND 3, QUESTION 5

What is a cannibal's favorite part of real analysis?





# ROUND 4: Bad Definitions

Each of these bad definitions will lead you to a real mathematical concept. Identify the real concept.



SAMPLE QUESTION:

A collection of music sung between mandated breaks by the vocal leader of a congregation

ANSWER: Cantor Set



English) preceding a noun and  
a specific instance.  
**definition** /,defɪ'nɪʃ(ə)n/ *n.* **1** a dem  
**b** statement of the meaning of  
etc. **2** distinctness in outline, c  
photographic image. [Latin relate  
[FINE]  
five 'fɪnɪʃ(ə)d]

# ROUND 4, QUESTION 1

Before being shot in his famous duel with Aaron Burr, Alexander invented this piece of electronics which is still used in computers today.



Eng. (n) preceding a noun and  
a specific instance.  
**definition** /,defi'nɪʃ(ə)n/ *n.* **1** a deni  
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[FINE]  
ve 'finr ad]  
v

## ROUND 4, QUESTION 2

In this episode of "Tangled: The Series," Rapunzel's chameleon friend discovers a strange three-sided object which leads the gang on a wild adventure.



Eng. (n) preceding a noun and  
a specific instance.  
**definition** /,defi'nɪʃ(ə)n/ *n.* **1** a deni  
**b** statement of the meaning of  
etc. **2** distinctness in outline, c  
photographic image. [Latin relati  
[FINE]  
ve 'finr sdj  
v

# ROUND 4, QUESTION 3

This is the patented process used by Nabisco to get the fig filling inside each dough roll.



English) preceding a noun and  
a specific instance.  
**definition** /,defɪ'nɪʃ(ə)n/ *n.* 1 a dem  
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etc. 2 distinctness in outline,  
photographic image. [Latin relat  
[FINE]  
five 'fɪnɪ' ad]



# ROUND 4, QUESTION 4

This term dictates where to place fish in shop windows of French pet stores to attract the most customers each hour.



English) preceding a noun and  
a specific instance.  
**definition** /,defr'nɪʃ(ə)n/ *n.* 1 a dem  
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[FINE]  
five 'fɪn/ ad/



# ROUND 4, QUESTION 5

This could be another name for the largest skyscraper in Vietnam's capital.



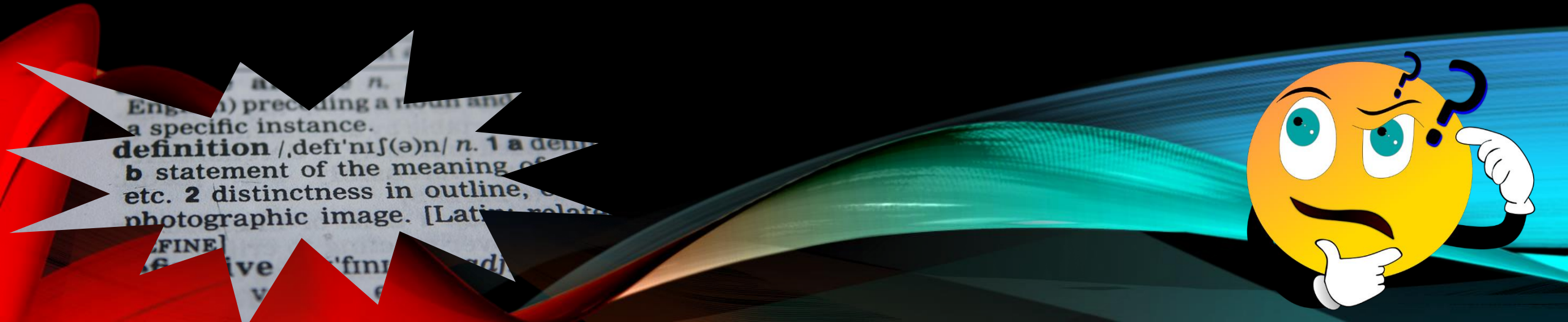
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Math Puns are the first sine of madness

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 $n \cdot \sin(2n)$   
 $(3n - 1)^2$

THANKS FOR PLAYING!!!



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